



### **Dysarthria and other-initiated repair in everyday conversation**

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## Introduction

Dysarthria refers to a motor speech disorder of neurological origin and is common in disorders such as amyotrophic lateral sclerosis (ALS); an acquired progressive neurological disorder, the most common form of which is often referred to as motor neurone disease (MND). People living with ALS (plwALS) develop weakness and spasticity of muscles and, over time, become increasingly paralysed. Approximately 20% of plwALS experience initial changes in the brainstem (bulbar) region of the brain, resulting in dysarthria (McDermott and Shaw, 2008). It is estimated that dysarthria affects 80–95% of plwALS (Tomik and Guilloff, 2010), with speech remaining adequate on average for 18-months from the first bulbar symptoms (Makkonen *et al.* 2017). Speech symptoms are typically a mixed spastic-flaccid dysarthria characterised by reduced articulatory range, phonatory-weakness, hypernasality and slow rate (Tomik *et al.* 2015, Lee *et al.* 2018). The main functional outcome of dysarthria is reduced intelligibility.

In theory, the ability to be understood should decrease in line with the severity of the dysarthria although in reality this can vary in relation to several variables including communication partner familiarity (Hustad, 2008). Thus, in addition to intelligibility as a measure of speech signal effectiveness, *comprehensibility* has been defined as “the extent to which a listener understands utterances produced by a speaker in a communication context” (Barefoot *et al.* 1993). Within the field of dysarthria, *comprehensibility* addresses, in part, the effects of so-called signal-independent variables such as syntax, semantics and physical context, on speech (Yorkston *et al.* 1996), with the more recent use of *understandability* (Bloch and Wilkinson, 2004, 2011) addressing the ways in which dysarthric speech is understood in the

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3 context of prior turn(s) at talk. The relationship between changes in intelligibility and  
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5 social interactivity is far from clear, with evidence showing that the two are not well  
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8 correlated (Bloch and Tuomainen, 2017).  
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### 10 11 *Other-initiated repair*

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15 Repair refers to practices used by participants to manage troubles in talk (Schegloff *et*  
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17 *al.* 1977; Schegloff 2000). The term *trouble source* describes what participants  
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19 themselves identify as problematic during their own conversation. Of interest here is  
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21 the practice of other-initiated repair (Schegloff *et al.* 1977), where one participant  
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23 (person B) treats something in *another* participant's (person A's) turn as a trouble  
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25 source. Regularly, though not always, the other initiation of repair functions to  
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27 highlight some difficulty participant B is having in understanding participant A's turn  
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29 (Schegloff, 2007). There are various ways in which such highlighting can be achieved  
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31 and these are used in a natural order based on their relative strength to locate a  
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33 repairable (Schegloff *et al.* 1977). Schegloff (2004) roughly divides other initiation of  
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35 repairs into those that request a 'fix' or those that offer a candidate for confirmation  
36  
37 or otherwise. Of the former, Drew (2007) examines open class next turn repair  
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39 initiators - such 'what? sorry? huh?' etc. These are seen as the weakest types of repair  
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41 initiator given that they do not specify the nature of the trouble, nor its location in the  
42  
43 prior turn. They simply signal that something is wrong. It is then up to the speaker of  
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45 the trouble source to address what might be problematic. What is clear is that other  
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47 initiations of repair 'overwhelmingly yield self-corrections' (Schegloff *et al.* 1977: 376),  
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49 and as such the other-initiation itself is only one part of a wider practice of repair. For  
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51 the practice to be successful there must be some sort of resolution following the  
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53 initiation. One type of repair practice is termed *other-initiated self repair* – where  
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3 person B initiates repair, and person A attempts to resolve the repair. To date most of  
4 the evidence regarding repair has focused on the identification and repair of individual  
5 trouble sources (Schegloff, 2000). Inevitably such troubles are resolved within the  
6 next few turns following initiation (Schegloff, 1992). However, beyond typical speakers  
7 we may usefully consider how repair operates in an environment of disordered or  
8 atypical speech or language.  
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### 16 17 18 19 *Dysarthria-in-interaction and repair*

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21 Given the known effects of dysarthria on intelligibility it is no surprise that trouble  
22 sources and repair in conversations featuring adults with dysarthric speech have been  
23 a considerable focus of attention. It has been demonstrated that trouble sources  
24 identified by a recipient using an other initiation of repair are a regular occurrence in  
25 conversations featuring speakers with dysarthria (Bloch, 2006; Bloch & Wilkinson,  
26 2004, 2011). The nature of these trouble sources has been analysed both in terms of  
27 action (e.g. topic change, Bloch *et al* 2015), and the relationships between turns or  
28 *sequentiality* (Bloch and Wilkinson, 2009). The common conclusion drawn across  
29 analyses is that dysarthria-in-interaction is undoubtedly characterized by troubles  
30 with intelligibility: a property of both the speaker and listener (Liss, 2007). Recipients  
31 have trouble hearing and understanding people with dysarthric speech. However, in  
32 everyday conversation other issues come into play, including how the recipient makes  
33 sense of a prior turn when it is not understood; particularly how they display their  
34 understanding of the relationship between turns and how this may be used as a  
35 resource to re-establish mutual understanding, i.e., intersubjectivity.  
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55 A further consideration relates to timing. Timing troubles in turn production  
56 and turn transition in augmentative and alternative communication (AAC) have been  
57 clearly identified (Higginbotham and Wilkins, 1999) but there is also some evidence  
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3 that speakers with even mild dysarthria, in certain circumstances, can also experience  
4 specific troubles relating to turn initiation. People with speech initiation difficulties  
5 due to Parkinson's disease, for example, can experience inappropriate overlapping  
6 turn onsets midway through an interactant's **turn construction unit** (TCU), leading to  
7 significant interactional difficulties despite only mild to moderate effects on  
8 intelligibility (Griffiths *et al.* 2012).  
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12 One issue that has yet to merit detailed and dedicated analytical attention is the **way**  
13 in which participants manage ongoing problems in talk *beyond* a single trouble source  
14 (although, see Laakso and Klippi, 1999, on aphasia). Preliminary work on an  
15 interaction between one woman with ALS and her husband offered insights into three  
16 repair sequences in one extended section of talk, each of which relates to utterances  
17 produced via an electronic AAC system (Bloch & Wilkinson, 2013). In two of the  
18 extracts the result is a prolonged repair sequence due to a failure by the recipient to  
19 understand both the initial AAC produced turn and subsequent attempts to clarify the  
20 meaning of that turn. The issue here is one of either recycled trouble sources and repair  
21 attempts on the same trouble (a repair loop) or a more complex incremental  
22 accomplishment of meaning in which the understanding of a problematic turn, or  
23 elements within that turn, are achieved in distinct stages over several turns. **Severe**  
24 dysarthria can therefore mean that attempts to resolve trouble sources are likely to  
25 become trouble sources in their own right, causing "cascading troubles" (see Kendrick,  
26 2015, p. 167). This may then **be** compounded by the restricted nature of other-initiated  
27 repair as a communicative act. Other-initiations of repair are typically employed as  
28 close to the trouble source turn as possible, and have a limited reach backward in prior  
29 talk (Schegloff, 1992). If there are problems located further away, or the problems are  
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3 more multifaceted, then other practices are likely necessary to unearth and deal with  
4 them (Ekberg, 2012).  
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8 Complex and cascading troubles matter insofar as they are likely to be an  
9 increasing difficulty for certain dyads, particularly with ALS, as they manage the  
10 progression of the disease and negotiate the delicate route between the use of natural  
11 speech and some form of AAC system. Moreover, these sorts of troubles and repair  
12 sequences are possibly characteristic of dysarthria caused by ALS, and are likely to  
13 provide detailed insight into the linguistic and communicative practices and lived  
14 experiences this communication disorder implicates.  
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25 In summary, dysarthria is, at its functional core, a communication disorder of  
26 **variable** intelligibility. Words and utterances are partially or completely not heard or  
27 understood. Previous research has usefully explored the nature of individual trouble  
28 sources and their resolution but there remains scope for understanding how  
29 participants collaboratively manage talk beyond a single trouble source.  
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36 The current study **aims to examine** other-initiation of repair of multiple,  
37 cascading trouble sources in everyday conversation involving a man with intelligibility  
38 problems arising from ALS. **This aim is motivated by a need to establish how multiple**  
39 **trouble sources are managed by participants and how they resolved. The relevance of**  
40 **this work to the fields of clinical linguistics, applied conversation analysis and speech-**  
41 **language pathology is one of furthering our understanding of the impact of dysarthria**  
42 **on everyday interaction and, critically, how this impact is addressed by participants**  
43 **themselves. If increasingly severe dysarthria is characterized by cascading troubles**  
44 **then clinicians and academics need to understand how such difficulties arise and how**  
45 **they are repaired. The findings have relevance to the theoretical constructs of**  
46 **communication disability as well as the practical understanding what goes wrong in**  
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dysarthria-in-interaction and how it might be resolved. This has a direct link to the development of new assessment and treatment approaches in speech-language pathology, particularly in the area of trouble source management.

## Methods

The data presented here were obtained as part of a larger study examining talk between people with progressive neurological diseases and family members. Approval for the study was awarded by a UK National Health Service (NHS) Research Ethics Committee. People with clinically diagnosed cognitive and/or language disorders were excluded from the study. In the present study, analyses are based on three extracts obtained from one dyad's data set.

### *Data Collection and method of analysis*

The dyad described below volunteered to participate in a study examining the effects of acquired dysarthria on everyday conversation. They were recruited through their local NHS speech and language therapy service.

The couple were loaned a Sony Handycam Video 8 CCD-TR330E Camcorder with a portable tripod. The able-bodied partner was then instructed in the camera use with an additional short written operating guide. The filming equipment use was rehearsed with a brief recording practice. They were asked to record themselves in the participant's nursing home room for approximately 30 minutes within an agreed one-week sampling period. It was requested that the recording take place during a regular opportunity for everyday conversation (e.g. during the mid-morning or mid-afternoon coffee time). This process was repeated at three monthly intervals (+/- one week) over a 12-month period. In total four video recordings were made. Each recording was

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3 collected by the researcher and digitized to a .mov format for repeated viewing using  
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5 QuickTime Player 7 software.  
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8 One hour and 48 minutes of recordings were subjected to conversation-analytic  
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10 transcription (see Hepburn and Bolden, 2017) by the first author. Transcription  
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12 depicted the timing and sequencing of talk, literal content (e.g., words and non-lexical  
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14 vocalisations), and aspects of prosody and intonation, as well as non-verbal  
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16 movements (e.g. facial expressions and body orientation). A sample of transcriptions  
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18 was checked for reliability by a member of the research team and through data sessions  
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20 with colleagues experienced in CA.  
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24 Recordings and transcripts were then examined for instances of other-  
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26 initiation of repair which were not resolved immediately by a next turn self-repair and  
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28 thus necessitated more than one other initiation of repair. Each multi-turn other-  
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30 initiation of repair sequence was subjected to detailed analysis. The three extracts  
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32 presented below have been selected in order to provide insight into specific features of  
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34 multi-turn other-initiated repair and to throw light onto the potential difficulties  
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36 encountered for both participants when a first attempt other initiation of repair is  
37  
38 unsuccessful.  
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#### 41 42 43 44 *Participants*

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46 The participant couple are identified in the text by the pseudonyms: Alex and Molly.  
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48 Alex is a 38-year-old English speaking computer programmer. Molly is his mother.  
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50 Approximately one year prior to data collection, Alex was diagnosed with amyotrophic  
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52 lateral sclerosis/ motor neuron disease (ALS/MND). The symptoms of his ALS were  
53  
54 reportedly emerging at least a year before diagnosis. Alex has significantly impaired  
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56 motor speech abilities (dysarthria) and both upper and lower limb mobility problems.  
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58 His is unable to make any purposeful movements with his arms, hands or legs. He  
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3 neither reports nor displays any language or cognitive difficulties. His speech is  
4 characterised by marked respiratory, phonatory, resonatory and articulatory  
5 weakness. At the point at which the extracts below were recorded, Alex's Frenchay  
6 (Enderby and Palmer, 2007) conversation intelligibility subsection rating is grade 'd'  
7 ('occasional words decipherable'), and his ALS Severity Scale (Hillel, Miller, Yorkston  
8 et al., 1989) rating is 5, described as 'speech is slow and laboured; extensive repetition  
9 or a 'translator' is commonly used; patient probably limits the complexity or length of  
10 messages'. He has been living in a nursing home for six months prior to data  
11 collection. Of the four video recordings made over a one-year period, Alex is able to  
12 use natural speech and facial gestures for the first two recordings. For the second two  
13 recordings in months 6-12 he utilises a text-based communication aid with  
14 accompanying facial gestures.

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30 The talk of Alex and Molly is unusual in that it is characterised by regular  
31 sequences of multi-turn utterances. In lay terms, Alex either produces individual letter  
32 names or words for Molly to repeat in the next turn position (Bloch, 2005). This is not  
33 primarily associated with repair (i.e. letter names are not produced to repair a prior  
34 trouble source) but rather a collaborative approach to talk that reduces the inherent  
35 risks of attempts at full words or phrases being produced with increasingly dysarthric  
36 speech (Bloch and Beeke, 2008). That is, full utterances in a single turn run the risk of  
37 being unintelligible, so in re-doing each of Alex's incremental contributions to the  
38 utterance, Molly not only displays her understanding on a turn-by-turn basis but also  
39 provides an opportunity for Alex to confirm or reject her understanding of each  
40 utterance part. One specific gesture is also worth mentioning here. Alex regularly uses  
41 a lower lip movement to the left to signal agreement or confirmation. This was  
42 conventionalised by Alex and Molly as his speech deteriorated and was shared with all  
43 new interactants.

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3 The data presented below are all from video recording **two**, in the first six  
4 months of the data collection period. At this point Alex is still able to use natural  
5 speech but there is evidence of increasing problems with intelligibility, even of single  
6 letter names.  
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### 13 **Analysis**

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15 There were numerous other initiations of repair produced by Molly throughout the  
16 data. In what follows we examine some of the ways that **Molly** uses other initiation of  
17 repair in dealing with the problems that arise in her interactions with Alex. We note  
18 that she uses other initiation of repair to transition from utterance construction to  
19 turn-by-turn talk. This is used to confirm Alex's contribution to the interaction and  
20 also to set up the trajectory for further talk. However, these extracts also show that the  
21 way Molly formats and develops these other initiation of repairs can introduce further  
22 problems for the interaction. We also consider how these troubles are resolved.  
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36 Immediately prior to Extract **1a** Alex has complained that his eye-cream has not been  
37 administered as expected by the nursing home staff. **Molly begins with an agreement**  
38 **(line 01).**  
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45 ((Insert Extract 1a around here))  
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50 At line **03**, Molly offers a reported account addressing Alex's complaint. The account  
51 appears to contradict the grounds for Alex's complaint, suggesting that the **nurses have**  
52 indeed administered the cream. Molly then offers a possible explanation, **querying**  
53 **whether** the cream might have been applied when Alex was asleep. Alex rejects this  
54 explanation with a head shake (line **07**) and initiates the next sequence of talk with an  
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3 utterance constructed with Molly over a number of turns (lines 09 to 45): *I am a liar*.  
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5 We are cautious of making assumptions about Alex's intentions but one possible  
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7 interpretation is of a potential attempt at sarcasm by invoking blameworthiness for  
8  
9 the contradictory accounts of the (non-)application of the eye-cream.  
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12 Molly begins to successfully synthesise the utterance at 46 (note Alex's smile in  
13  
14 overlap) and produces an interpreted voicing of the whole utterance 'you're a liar!'.  
15  
16 This turn simultaneously accomplishes the construction of the utterance and, possibly,  
17  
18 other-initiating repair, or marking the newsworthiness/humour of the assertion and  
19  
20 encouraging further talk on the topic. Molly now offers a less equivocal other-initiation  
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22 of repair using an alternative question. It targets the problematicity of the *you* in the  
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24 turn she has developed with (and on behalf of) Alex.  
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32 ((Insert Extract 1b around here))  
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37 Molly's alternative question ('you're a liar or they're a liar') at line 53 exploits  
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39 an ambiguity in Alex's utterance, and addresses how it should be taken up. The  
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41 individual words have been shown to be intelligible, but Molly is seeking clarification  
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43 as to the target of the allegation. At the same time, Molly uses the cloak of repair to  
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45 effect a tease of Alex by zeroing in on this possible (but not plausible) source of  
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47 ambiguity, i.e., Alex is highly unlikely to be earnestly describing himself as a 'liar'. In  
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49 response Alex smiles (line 54), orienting to the teasing aspect of Molly's action. Just as  
50  
51 Alex's mouth widens (56) Molly begins a turn, saying 'I'll sort it out after this' (line 57).  
52  
53 The most likely reference here is Alex's complaint about the eye cream, with a temporal  
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55 reference to 'after this' being the video recording session. This turn claims a future  
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57 action regarding Alex's complaint and also closes down the repair opportunity space  
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3 (Schegloff, 1992), treating Alex's smiling response to her other-initiation of repair /  
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(Schegloff, 1992), treating Alex's smiling response to her other-initiation of repair /  
tease as adequate for the interaction to progress.

However, just before Molly's turn completion in line 57, Alex produces a vowel  
initiated vocalisation. This is not a clear production, but it is possible that Alex is  
saying 'I am' in this turn as the selected alternative from Molly's alternative question.  
If so, Alex appears to be offering a confirming repair solution in response to Molly's  
other-initiation of repair. Molly proceeds to voice 'me' as a spelling outcome at the  
beginning of line 69. It is then the latter half of Molly's turn in line 69 that reveals her  
understanding of Alex's prior utterance action.

Molly's turn 'me (0.2) you will' (line 69) is followed by a short pause before  
Molly translates the pronominal reference, signalling a shift from a voicing of Alex's  
talk to the authoring of her own action. The ellipsis in 'you will' links Alex's utterance  
with Molly's assertion at 57, i.e., 'I'll sort it out'. With this other-initiation of repair,  
Molly is displaying a hearing of Alex's talk as being linked with her assertion rather  
than as a response to her prior other-initiation of repair at 53.

Alex begins a very slight head shake (line 71), and Molly produces an upgraded  
other-initiation at line 72, filling in the prior ellipsis with 'you'll sort it out' (line 72).  
Molly's expanded other-initiation of repair receives another headshake from Alex at  
line 74. Alex takes the next turn and recommences collaborative utterance  
construction. This culminates in another other-initiation of repair from Molly at 87,  
which settles on 'I am a liar' as a candidate understanding (Heritage, 1984: 319). Molly  
then asks Alex if he thinks that is what 'they are saying' (line 91). This indicates Molly  
has understood Alex's contribution as a new bit of reported speech rather than  
confirming her distant other-initiation of repair. The sequence concludes with Molly

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3 offering a critical evaluation of the nursing staff, thus aligning herself with Alex's  
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5 complaint.  
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There are multiple sources of complexity in Extract 1. One of them is the way that Alex's responses to Molly's other-initiation of repair at line 53 are taken up, and its cascading effects for the interaction. The teasing nature of Molly's other-initiation of repair provides for a response that addresses either or both the tease and the repair. Molly takes Alex's smile as constituting a complete response in its own right, and as prioritising the teasing aspect of her action. However, it seems that Alex revised his smile into a preliminary to a turn-based response (i.e., 'I am'), but his turn came after Molly had already closed the repair sequence. This then set up a trajectory in which his attempt to participate in the repair sequence was heard as contributing to another sequence altogether. Critically, then, Alex's apparent 'me', which is voiced by Molly at the start of line 69, is transformed into a 'you will' that contributes to the 'I'll sort it out after this' sequence. Alex rejects Molly's treatment of 'me' as indicating that he will sort out the problem, initially via head shakes (lines 71 and 74). He then goes on to repeat his prior talk 'I am a liar', which successfully enables them to return to the complaint topic (but not to the prior repair sequence). Molly does not openly disagree with what Alex has said at this point, but she does use next turn to establish the action of the turn (reported speech), and then proceeds to display alignment in part with Alex's complaint – 'I don't think um half of them know what the other half are doing' (line 92).

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3 Extract 2 immediately follows Extract 1b. As part of addressing Alex's  
4 complaints about the nurses not having applied his eye cream, Molly turns the topic  
5 to a medicinal patch<sup>1</sup>.  
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13 ((Insert Extract 2a around here))  
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18 The sequence begins with Molly's attempt to close the complaint talk down through a  
19 proposal regarding this patch. Alex follows with a number of indistinct syllables,  
20 which Molly anticipatorily completes with a candidate understanding other initiation  
21 of repair : 'want one on both sides?' (line 16). In doing so, Molly treats the utterance  
22 she and Alex developed between lines 6 and 14 as modifying her proposal: from a patch  
23 on one side of his neck, to a patch on both sides.  
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32 As Molly produces her other initiation of repair, Alex shakes his head in terminal  
33 overlap and continues with the vocalisation 'ar:: a: one'. The head shake could be  
34 treated as a negation to the candidate as in 'no I don't want one on both sides', or it  
35 could be treated as an other initiation of repair in its own right, signalling a broader  
36 trouble in all or part of the prior turn. The understanding that Molly displays in line  
37 19 is that 'both sides' is incorrect. Molly's following, other-initiating turn 'you want  
38 one' (line 19) recognises that there is some hitch. As we shall see, Alex has not said the  
39 word 'want' at all, but is it proving difficult for him to exert adequate control over his  
40 vocalisations at the required level of detail.  
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58 <sup>1</sup> 'Patch' refers to an adhesive strip normally placed on one side of the neck, but  
59 potentially both sides, containing medication to reduce the build-up of saliva and, in  
60 turn, minimise the occurrence of coughing and/or aspiration.

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3 Alex's responses to Molly's talk at line 19 show that the problem remains. He  
4 shakes his head and produces a two-syllable utterance. Molly then produces 'one' (line  
5 23) followed by Alex's single syllable to which Molly offers a candidate letter of 'en?'  
6 (line 27). In line 29 Alex shakes his head and produces what sounds like a repeat of his  
7 prior turn, which is more clearly akin to the word 'and', and Molly takes it up in this  
8 way in line 31. Molly and Alex continue collaboratively developing this utterance  
9 between lines 33 and 37.

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12 Molly offers a candidate understanding other-initiation of their shared work at line  
13 39 with 'one and a half?'. Molly's other-initiation suggests that she has understood this  
14 as a complete utterance. In addition, the lexical continuity of the word 'one' may have  
15 encouraged her to hear it as relating to the patches. However, Alex and Molly then add  
16 the word 'days' before Alex produces a confirmatory lip movement (line 45).

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19 It is possible that the lip movement is being used here to signal an end of utterance,  
20 with 'one and half days' complete enough that Molly will now be able to respond to it.  
21 This is supported by the silence at line 46, where neither Alex nor Molly make any  
22 moves to develop the utterance further. Instead, Molly employs another action  
23 relevant at possible utterance completion: she other-initiates repair by offering a  
24 candidate **understanding** of the topic, i.e., 'what your (.) the cream we're on about  
25 ↑now still?' (line 48). By ending her turn with 'still' there is perhaps an indication that  
26 the topic of cream is one that has passed, or is at least one that Molly has now moved  
27 on from herself. Alex's lower lip movement following 'cream' appears to confirm that  
28 his utterance should be heard as contributing to his earlier complaint and not the more  
29 recent patch proposal. Molly's other-initiation of repair also abandons her focus on  
30 Alex's as wanting something, as per lines 16-19. Instead, she introduces the possibility  
31 that Alex was accomplishing some other action between lines 6 and 43.

((Insert Extract 2b around here))

Following Alex's confirmation of 'cream' he produces 'es' (line 51). This is a likely repeat of his overlapped and subsequently abandoned turn initiation at line 47. A word is then collaboratively spelled aloud culminating in Molly's production of 'since' (line 76). Alex's response to this is a clear lower lip movement followed by Molly's turn 'one and a half' (line 80), a recapping of the prior talk. Molly then adds 'since' (line 82) bringing both participants to the most current understanding of prior talk. In line 84 Alex now produces a one syllable utterance that Molly interprets as 'this'. Alex then produces a very quiet aspiration which is followed by Molly offering a check on her prior understanding through the production of 'no?' (line 90). There is then a silence before Molly produces a further topic clarification other initiation of repair 'are we talking about cream or are we talking about patches'. During the production of 'cream' Alex move's his lower lip down. Molly then initiates an additional other initiation of repair with a more targeted polar response 'cream?' (line 95). Alex's response here is to close and open his eyes, treated by Molly as confirmatory.

In summary, Alex's eye-cream complaint is shown to proceed but with considerable disruption to progressivity. A major issue here is the limited local scope of other initiation of repair itself. Sequentially it can only reach back so far. In **Extracts 2a and 2b** Molly does manage the repair by using other initiation of repairs that formulate the topic. Difficulties are compounded by the fact that Alex has limited resources for self-repair at his disposal. A head-shake can signal a negation of the prior turn but it cannot specify the nature of the trouble. Thus, the 'want one' turns out to



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3 be an incorrect interpretation within a larger turn construction but Alex is unable to  
4 locate it specifically.  
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10 In Extract 3, Alex evaluates his coffee as ‘awful’ and Molly offers to make him another  
11 one later. Alex then makes an enquiry: ‘where from?’. Molly treats this turn as relating  
12 to where the second coffee will be made, but it transpires that Alex is asking where the  
13 first (awful) coffee came from. As with Extracts 1 and 2, Alex’s turn is misunderstood  
14 by Molly despite her use of other-initiated repair. The trouble again arises from the  
15 way that Molly links Alex’s talk with the surrounding sequential environment, and  
16 Alex’s limited ability to effectively position his own talk.  
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26 ((Insert Extract 3a around here))  
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32 This sequence begins with Alex drinking coffee. Following his subsequent talk at  
33 line 06, Molly initiates repair with ‘it’s what?’. Alex’s self-repair, accompanied by a  
34 smile, is receipted by Molly as ‘awful’ together with her own appreciation of his critical  
35 (but non-serious) stance. She then offers Alex a ‘decent one’ later.  
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41 Whilst Molly is walking around the bed, Alex produces two syllables and a further  
42 syllable as she sits down. Molly now other-initiates using an open format ‘mm?’ (line  
43 23). There follows a period of joint utterance construction culminating in a candidate  
44 understanding from Molly at line 46, ‘where from?’. Her answer—‘your coffee making  
45 machine’—specifies how Molly will make Alex’s better tasting coffee later on.  
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52 With this response, Molly is displaying an understanding of Alex’s talk as tied to  
53 her offer. As Molly produces her response at line 49, Alex interrupts with overlapping  
54 talk. His overlapping turn comprises an elongated vowel sound and lip movement,  
55 followed by a slight head shake.  
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((Insert Extract 3b around here))

Molly now other-initiates repair with a candidate understanding in line 52 ‘no good?’, which she develops further in line 55 ‘is that awful as well?’. These other-initiations of repair treat Alex’s turn as accomplishing further negative evaluation; in this case, targeting his own coffee making machine’s output.

There is an opportunity now for Alex to confirm his negative evaluation of his coffee machine. However, at this point he shakes his head. Alex and Molly proceed to produce ‘where do they’ (lines 59 to 75) before Molly anticipatorily completes Alex’s turn construction with: ‘where do they get the coffee from’ (line 77). This turn begins with a laughter token, contains laughter within the turn, and receives reciprocal laughter from Alex in overlap.

The difficulty we have focused on in Extract 3 comes to be visible around Alex’s ‘where from’, which is collaboratively produced between lines 20 and 46. Molly treats this as a question asking where she will be making Alex’s decent cup of coffee (as offered at line 15). Subsequent talk by both participants reveals this treatment by Molly as incorrect. ‘Where from’ is actually produced by Alex as an expansion to his evaluation of the coffee as ‘awful’; something along the lines of ‘where do they get this awful coffee from’. It is unclear whether this is turn is more like an information-seeking question, an assessment, or something in between. Molly treats it as something in between through her smiles, laughter, and candidate answer ‘cheap shop’ at line 80.

The first point at which Alex might try to signal problematic uptake by Molly is immediately after her answer ‘your coffee making machine’ (line 49). Indeed, whilst

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3 Molly's turn is being produced, Alex attempts to speak, closes his eyes and shakes his  
4 head slightly. This is consistent with third-turn self-repair (Schegloff, 1997), with Alex  
5 acting to resolve the misunderstanding caused by his own talk in line 46. Molly's other-  
6 initiations of repair in line 52 and 55 are sensitive to the problems Alex is indicating,  
7 but find their grounding in the immediate sequential environment; that is, Alex's turn  
8 and her own misunderstanding of 'where from'. This means that her candidate  
9 understandings build these features of the local sequential environment into their  
10 design, filtering Alex's conduct through them. As a consequence, Molly renders Alex's  
11 turn at 50 as a negative evaluation of his own coffee machine.  
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23 The ambiguity of 'where from' strongly influences how Molly navigates through  
24 these moments. Its ambiguity arises from two sources. The first is its positioning  
25 within the ongoing talk. The eventual, collaborative production of 'where from' occurs  
26 quite some distance from the turn to which it is sequentially linked, i.e., line 11. It is  
27 possible that Alex began his first attempt at this utterance in line 12, following Molly's  
28 voicing of 'awful'. In many instances Alex begins a turn with some form of voicing  
29 initiation before moving onto the production of intelligible word or letter names. This  
30 is a result of both respiratory and phonatory weakness. In this case, Alex initiates an  
31 elongated vowel sound before his production is overlapped by Molly's 'make' (line 13).  
32 Both participants then pause and it is Molly who then restarts with 'make you a decent  
33 one later'. In doing so, Molly transforms the sequential context in which Alex has  
34 attempted to insert his talk, commencing the increasingly substantial displacement  
35 between Alex's utterance and its predecessor.  
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52 The second source of ambiguity comes from the design of the turn itself. The  
53 elliptical nature of 'where from' strongly invokes prior talk, both in terms of reference  
54 and in terms of sequence (see, e.g., Fox and Thompson, 2010). It furthermore  
55 encourages Molly to hear Alex's turn as accepting the terms of the prior talk, and 'a  
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3 decent one' is the most proximal, unproblematic noun phrase in the most proximal  
4 (non-minimal) action of the sequence. An enquiry about the source of a decent coffee  
5 would also add further, more specific information to that already provided. This also  
6 means that a link between 'awful' and 'where from' is less straightforward to establish,  
7 particularly in the absence of indications via embodiment (e.g., gaze, pointing) or  
8 prosody, both of which are difficult for Alex to accomplish. That is, he is unable to  
9 direct Molly's gaze to the coffee given that the cup has been removed from view, and  
10 he is unable to signal fine prosodic control linking 'where from' to 'awful'. Given this  
11 restriction, Alex's ability to reference is restricted in this instance to the semantic  
12 meaning of turn content and the sequential placement of that turn within the ongoing  
13 talk.

## 30 Discussion

33 This study explored **cascading** other-initiated repair sequences in dyadic everyday  
34 conversations involving a man with severe ALS dysarthria and his mother. We  
35 examined how Alex and Molly managed other-initiations of repair, and how their talk  
36 featured multiple troubles and repair attempts. Particular attention was drawn to  
37 problems in sequential understanding. The evidence presented here is that the  
38 participants were able to (in some way) resolve their troubles, but it required extensive  
39 work to both identify the trouble source and to unravel the problem to reach a  
40 satisfactory understanding. This contrasts with earlier findings relating to speakers  
41 with Parkinson's disease in which opportunities to repair talk that is compromised in  
42 terms of intelligibility by overlap are often not pursued (Griffiths *et al.* 2012). Alex's  
43 physical restrictions were seen to play an important part in his ability to position his  
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3 talk in sequential context and successfully accomplish self-repair; particularly, third-  
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5 turn repair.  
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### 10 *Uses and scope of other-initiation of repair*

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12 In each of the extracts presented, we have seen some core ways that Molly uses other-  
13  
14 initiation of repair in dealing with the problems that arise in her interactions with Alex.  
15  
16 In particular, we have seen that she uses other-initiation of repair to transition from  
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18 utterance construction to turn-by-turn talk (e.g., Extract 1 line 53, Extract 2 line 39,  
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20 Extract 3 line 46). This is an important moment for confirming Alex's contribution to  
21  
22 the interaction and setting up the trajectory for further talk. However, these extracts  
23  
24 also indicate that the way Molly formats and develops these other-initiations of repair  
25  
26 can introduce further problems for the interaction. One reason for this is the  
27  
28 intrinsically limited scope of other-initiation of repair, which typically reaches back  
29  
30 into immediately adjacent turns in the same sequence of talk (e.g., Ekberg, 2012;  
31  
32 Robinson, 2014). The local scope of most other-initiations of repair—especially the  
33  
34 more 'closed' format types Molly employed—subsumes apparently unproblematic  
35  
36 aspects of sequential context. The instability of sequential context and intersubjectivity  
37  
38 in Alex and Molly's interactions mean that this feature of other-initiations of repair can  
39  
40 be troublesome when Molly's inferences about sequential relationships differ from the  
41  
42 relationships Alex had been targeting. Molly's other-initiations of repair therefore have  
43  
44 the potential to refract the direction of the talk, adding yet another layer to the—already  
45  
46 complex—problems implicated by Alex's dysarthria.  
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53 We have also seen in Extract 2 that Molly can strategically use formulation-like  
54  
55 other-initiations of repair in which she offers candidate **understandings** of the topic for  
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57 confirmation from Alex. This practice is advantageous in that it allows Molly to address  
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59 prior talk more coarsely, which may mitigate the risk of refracting sequential context  
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3 via other-initiation of repair, as outlined above. However, it halts talk more firmly, and,  
4  
5 as per Molly's conduct in Extract 2, may be used only as a last resort in addressing  
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7 persistent problems.  
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### 10 11 12 *Sequential positioning and self-repair* 13

14 Alex's inability to position his talk sequentially and effectively self-repair also forms  
15 part of the story here. On the first point, the timing of Alex's turns regularly  
16  
17 contributed to Molly's misattribution of the relevant sequential context. Timing is  
18  
19 clearly a major factor with reference to AAC output (Clarke and Wilkinson, 2010), but  
20  
21 far less attention has been paid to the effects of timing on dysarthria-in-interaction.  
22  
23 For instance, in Extract 1, Alex visibly prepares to speak at line 56 with what turns out  
24  
25 to be a second pair part response to Molly's prior turn, but what he does is overwritten  
26  
27 by Molly's 'I'll sort it out after this'. His speech itself is only audible at the very end of  
28  
29 Molly's turn, and he essentially misses the moment in which his turn is most likely to  
30  
31 be heard as related to its target in line 53. Issues of sequential positioning are also  
32  
33 created by Alex's sparse utterances. Explicit indications of sequential relationships are  
34  
35 accomplished using turn beginning elements (e.g., conjunctions; see Schegloff, 2004;  
36  
37 see also Barnes, Ferguson, and Candlin, 2013, on aphasia), which are regularly not  
38  
39 included in Alex's turns. On the second point, it is also clear that Alex's limited  
40  
41 semiotic resources contribute to ambiguous resolutions of other-initiated repair  
42  
43 sequences, and can prevent him from effectively addressing problematic uptake of his  
44  
45 turns in third turn position. In addition to his inefficient access to lexical and  
46  
47 grammatical resources, gestures, facial expression and prosody are all restricted,  
48  
49 leaving Alex with various confirmatory responses (e.g., head shakes, downward lip  
50  
51 movement), collaborative word output, and other "negative" evidence (e.g., lack of  
52  
53 response) to form communicative actions. These resources are broadly ill-suited to the  
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3 kinds of fine adjustments required for repair solutions, compounding his dependence  
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5 on timing for building sequential relationships.  
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### 10 *Anticipatory completion*

11  
12 Previous work has identified the practice of anticipatory completion as one way in  
13  
14 which Molly proposes an as yet to be completed *word* in progress (Bloch, 2005, 2011).

15  
16 **The potential benefit of such a completion by other is one of efficiency: it saves Alex**  
17  
18 **respiratory and articulatory effort by not having to say aloud every element of a word.**

19  
20 In the data presented here we see anticipation of *utterances* in progress. This can  
21  
22 certainly work well, as in Extract 3 line 77 – ‘where do they *get the coffee from?*’ but  
23  
24 other completion of talk in progress can also be incorrect as in Extract 2 ‘want one *on*  
25  
26 *both sides?*’ (Molly: line 16). The consequences of an incorrect completion are shown  
27  
28 to be significant.  
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### 33 *Intelligibility and understandability*

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36 **With reference to the nature of the troubles observed we note that the relationship**  
37  
38 **between intelligibility and understandability is both intimate and complex. There**  
39  
40 **remains no doubt that variable intelligibility sits at the heart of dysarthria. Alex’s**  
41  
42 **adapted turn design featuring individual letter names, for example, is only being used**  
43  
44 **because his speech is becoming increasingly unintelligible. However, if**  
45  
46 **(un)intelligibility were the only problem we would not expect the ongoing difficulties**  
47  
48 **displayed by the participants. What Molly displays are troubles with intelligibility**  
49  
50 **combined with understanding difficulties: ‘I am a liar’, ‘one and half days’ and ‘where**  
51  
52 **from’ are all, eventually, shown to be intelligible but they do not prove understandable**  
53  
54 **until additional repair work is undertaken. The nature of these difficulties relates to**  
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3 the sequential relationship between turns, the timings of Alex's turn initiations and the  
4  
5 design of Alex's turns themselves.  
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10 It is important to recognise the limitations of this work. The study is limited by  
11  
12 focusing on data from one dyad and from one data collection point. Analysis of multi-  
13  
14 turn other-initiated repair sequences may have been enhanced through a larger sample  
15  
16 set to identify systematic practices across a number of environments. Future research  
17  
18 should consider how repair practices change over time in the face of a deteriorating  
19  
20 disease.  
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26 In conclusion, other-initiated repair is a fundamental mechanism for managing  
27  
28 troubles associated with unintelligible or partially intelligible speech. Individual  
29  
30 dyads, such as Alex and Molly, may develop new practices in interaction to minimise  
31  
32 the problems associated with moderate to severe dysarthria. However, as the severity  
33  
34 of the dysarthria increases further and intelligibility becomes even more challenging,  
35  
36 repair itself is seen to become more complex. The interactional moments presented  
37  
38 in this paper reveal an important limitation of other initiation of repair —certainly for  
39  
40 Molly and Alex but likely for other plwALS too — namely, its grounding in an  
41  
42 apparently unproblematic sequential context. The degree of instability in mutual  
43  
44 understanding that dysarthria can cause is important for developing speech pathology  
45  
46 assessment and intervention strategies focused on everyday communication. Such  
47  
48 strategies should be underpinned by accounts of the conversational problems caused  
49  
50 by ALS, and the ways that they relate to self- and other-initiated repair practices  
51  
52 dedicated to dealing with them. The present study has offered a depiction of layered  
53  
54 conversational problems that other-initiation of repair may not completely resolve or,  
55  
56 in some cases, multiply.  
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3 Mapping the relationships between conversational problems and other-  
4 initiation of repair practices will likely be vital for developing enchronically-valid  
5 clinical resources for dysarthria, i.e., clinical resources that directly and empirically  
6 capture the real-time accomplishment of communication (see Barnes and Bloch,  
7 2019). Future studies systematically examining other initiation of repair and  
8 associated sequences over time, and tracking its evolution in line a with deterioration  
9 in speech and the adoption of communication aid systems, are likely to be conceptually  
10 and practically helpfully for developing novel clinical resources. This may encompass  
11 new assessment tools that capture the behaviours of both communication partners,  
12 not just those of the person with dysarthria. New CA informed treatment packages for  
13 people living with dysarthria might also be developed, with a focus on improving how  
14 trouble sources are managed and resolved with reference to evidence from published  
15 studies but also from dyads themselves, particularly those who display creative ways  
16 of dealing with the impact of deteriorating intelligibility through their interactions.  
17 Exploring the degree to which existing conversation interventions for people with  
18 aphasia (Beeke et al. 2015) might be utilised for people with dysarthria is now  
19 underway, with potential for a generic communication disability intervention  
20 approach that targets facilitators and barriers in conversation without the technical  
21 demands of conversation analysis as a formal research tool.

## References

22  
23  
24 Barefoot, S. M., Bochner, J. H., Johnson, B. A., & Eigen, B. A. v. (1993). Rating deaf  
25 speakers' comprehensibility: An exploratory investigation. *American Journal*  
26 *of Speech-Language Pathology*, 2, 31-35.

1  
2  
3 Barnes, S., & Bloch, S. (2019). Why is measuring communication difficult? A critical  
4 review of current speech pathology concepts and measures. *Clinical Linguistics*  
5 & *Phonetics*, 33, 219-236.  
6  
7  
8  
9

10  
11  
12 Beeke, S., Beckley, F., Johnson, F., Heilemann, C., Edwards, S., Maxim, J. & Best, W.  
13 (2015). Conversation focused aphasia therapy: investigating the adoption of  
14 strategies by people with agrammatism. *Aphasiology*, 29, 355-377.  
15  
16  
17  
18

19  
20  
21 Bloch, S. (2005). Co-constructing meaning in dysarthria: word and letter repetition in  
22 the construction of turns. In K. Richards and P. Seedhouse (Eds.), *Applying*  
23 *Conversation Analysis* (pp. 38-55). Basingstoke, Palgrave Macmillan  
24  
25  
26  
27

28  
29  
30 Bloch, S. (2011). Anticipatory other-completion of augmentative and alternative  
31 communication talk: a conversation analysis study. *Disability and*  
32 *Rehabilitation*, 33, 261-269.  
33  
34  
35  
36

37  
38  
39 Bloch, S. and S. Beeke (2008). Co-constructed talk in the conversations of people with  
40 dysarthria and aphasia. *Clinical Linguistics and Phonetics*, 22, 974-990.  
41  
42  
43  
44

45  
46 Bloch, S. and J. Tuomainen (2017). Progressive dysarthria and augmentative and  
47 alternative communication in conversation: establishing the reliability of the  
48 Dysarthria-in-Interaction Profile. *International Journal of Language and*  
49 *Communication Disorders*, 52, 3-9.  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

- 1  
2  
3 Bloch, S. and R. Wilkinson (2004). The Understandability of AAC: A Conversation  
4  
5 Analysis Study of Acquired Dysarthria. *AAC: Augmentative and Alternative*  
6  
7 *Communication*, 272-282.  
8  
9  
10  
11  
12 Bloch, S. and R. Wilkinson (2011). Acquired dysarthria in conversation: Methods of  
13  
14 resolving understandability problems. *International Journal of Language &*  
15  
16 *Communication Disorders*, 46, 510-523.  
17  
18  
19  
20  
21 Bloch, S. and R. Wilkinson (2013). Multiple troubles and repair in voice output  
22  
23 communication aid-mediated interaction. In N. Norén, C. Samuelsson and C.  
24  
25 Plejert (Eds.) *Aided Communication in Everyday Interaction* (pp. 95-126).  
26  
27 Guildford, J&R Press.  
28  
29  
30  
31  
32  
33 Clarke, M. T. and R. Wilkinson (2010). Communication aid use in children's conversation:  
34  
35 Time, timing and speaker transfer. In H. Gardener and M. Forrester (Eds.)  
36  
37 *Analysing interaction in childhood: Insights from conversation analysis* (pp.249-  
38  
39 266). London, Wiley  
40  
41  
42  
43  
44 Drew, P. (1997). 'Open' class repair initiators in response to sequential sources of  
45  
46 trouble in conversation. *Journal of Pragmatics*, 28, 69-101.  
47  
48  
49  
50  
51 Ekberg, S. (2012). Addressing a source of trouble outside of the repair space. *Journal*  
52  
53 *of Pragmatics*, 44, 374-386.  
54  
55  
56  
57  
58 Enderby, P. and R. Palmer (2007) Frenchay Dysarthria Assessment (2nd Edition).  
59  
60 Texas, Proed.

1  
2  
3  
4  
5 Fox, B. A., & Thompson, S. A. (2010). Responses to Wh-questions in English  
6 conversation. *Research on Language and Social Interaction*, 43, 133-156.  
7  
8

9  
10  
11  
12 Griffiths, S., R. Barnes, N. Britten and R. Wilkinson (2012). Potential Causes and  
13 Consequences of Overlap in Talk between Speakers with Parkinson's Disease  
14 and Their Familiar Conversation Partners. *Seminars in Speech and Language*,  
15 1, 27-43.  
16  
17  
18  
19  
20

21  
22  
23 Hepburn, A., & Bolden, G. B. (2017). *Transcribing for social research*. London, UK:  
24 Sage.  
25  
26  
27  
28  
29

30 Heritage J (1984) A change-of-state token and aspects of its sequential placement.  
31  
32 In: Atkinson JM and Heritage J (eds) *Structures of Social Action: Studies in*  
33 *Conversation Analysis*. Cambridge: Cambridge University Press, 299–345.  
34  
35  
36  
37  
38  
39  
40

41 Higginbotham, D. and D. Wilkins (1999). Slipping through the timestream: Social  
42 issues of time and timing in augmented interactions. In D. Kovarsky, J. Duchan  
43 and M. Maxwell (Eds.) *Constructing (in) competence: Disabling evaluations*  
44 *in clinical and social interaction* (pp.49-82). Mahwah, New Jersey, Lawrence  
45 Erlbaum Associates  
46  
47  
48  
49  
50  
51  
52

53  
54  
55 Hillel, A., R. Miller, K. Yorkston, E. McDonald, E. Norris and N. Konikow (1989)  
56 Amyotrophic lateral sclerosis severity scale. *Journal of Neuroepidemiology*, 8, 142-  
57  
58  
59  
60 150.

1  
2  
3  
4  
5 Hustad, K. C. (2008). The relationship between listener comprehension and  
6 intelligibility scores for speakers with dysarthria. *Journal of Speech, Language, and*  
7  
8  
9  
10 *Hearing Research*, 51, 562-573.

11  
12  
13  
14 Kendrick, K. H. (2015). The intersection of turn-taking and repair: the timing of other-  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
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47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
initiations of repair in conversation. *Front Psychol* 6: 250.

Laakso, M. and A. Klippi (1999). A closer look at the 'hint and guess' sequences in aphasic  
conversation. *Aphasiology*, 13, 345-363.

Liss, J. M. (2007). The role of speech perception in motor speech disorders. *Motor  
Speech Disorders*. G. Weismer. San Diego, Plural Publishing.

McDermott, C.J. and P. Shaw 2008). Diagnosis and management of motor neurone  
disease. *British Medical Journal*, 336(7645): 658-662

Robinson, J. D. (2014). What "What?" tells us about how conversationalists manage  
intersubjectivity. *Research on Language and Social Interaction*, 47, 109-129.

Schegloff, E. A., 1992. Repair after next turn: The last structurally provided defense of  
intersubjectivity in conversation. *American Journal of Sociology*, 97, 1295-1345.

1  
2  
3 Schegloff, E. A. (1997). Third turn repair. In G. Guy, C. Feagin, D. Schiffrin, & J. Baugh  
4 (Eds.), *Towards a social science of language* (Vol. 2, pp. 32-40).  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
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Amsterdam/Philadelphia: John Benjamins.

Schegloff, E.A. (2000). When 'others' initiate repair. *Applied Linguistics* 21, 205 -243.

Schegloff, E. A. (2004). On dispensibility. *Research on Language & Social Interaction*,  
37, 95-149.

Schegloff, E., G. Jefferson and H. Sacks (1977). The preference for self-correction in  
the organization of repair in conversation. *Language*, 53, 361-382.

Tomik, B. and R. J. Guiloff (2010). Dysarthria in amyotrophic lateral sclerosis: A  
review. *Amyotrophic Lateral Sclerosis*, 11, 4-15.

Yorkston, K., E. Strand and M. Kennedy (1996). Comprehensibility of dysarthric speech:  
Implications for assessment and treatment planning, *American Journal of Speech-  
Language Pathology*, 5, 55-66.

## Extracts

## Extract 1a

001 M no I know  
 002 (0.4)  
 003 M um (.) but she did say: as far she knew (0.4) you'd had it this morning  
 004 according to the nigh-night staff when they handed over.  
 005 (4.8)  
 006 M didn't do it when you were as[leep. ]  
 007 A [((shakes head))]  
 008 (0.8)  
 009 A ((turns head to M and opens mouth)) (#I:: um)  
 010 (0.2)  
 011 M I am,  
 012 (0.9)  
 013 A ahh  
 014 (0.2)  
 015 M a,  
 016 (1.4)  
 017 A (o: har)  
 018 (0.2)  
 019 M o: aye,  
 020 (0.7)  
 021 A ((very slight head shake)) #ar::hhh  
 022 (0.4)  
 023 M o: ar  
 024 (0.2)  
 025 A ((slight head shake)) (hhhe ehye)  
 026 (0.4)  
 027 M o:=  
 028 A =((slight head shake))=  
 029 M =EL?  
 030 (0.6)  
 031 A #eyhe  
 032 (0.3)  
 033 M eye,  
 034 (0.6)  
 035 A (°a°)  
 036 (0.5)  
 037 M kay  
 038 (0.4)  
 039 A ((slight head shake)) (ah::)  
 040 (1.0)  
 041 M [el eye, ]  
 042 [((moves closer to A))]  
 043 (0.7)  
 044 A (a: arhhh:)  
 045 (1.5)  
 046 M a: ar: (0.3) [ɛliar?ɛ ]  
 047 A [((smiles))]  
 048 (0.5)  
 049 M ɛyou're a liar!ɛ  
 050 (0.2)  
 051 M °h-.hhh=

1  
2  
3 052 A =((looks over to TV))  
4  
5  
6

7 **Extract 1b**

8  
9 053 M £you're a liar or [they're a liar£ ]  
10 054 A [((looks back to M)) ] ((smiles)) °he°  
11 055 (0.9)  
12 056 A ((opens mouth slightly)) [((opens mouth wider))]  
13 057 M [I'll sort ]it out after th[is. ]  
14 058 A [ (I:lem)  
15 059 (0.3)  
16 060 M em,  
17 061 (1.0)  
18 062 M em?  
19 063 (0.4)  
20 064 A (e:h hh)  
21 065 (0.6)  
22 066 M ee:?  
23 067 (0.8)  
24 068 A ((smiles))=  
25 069 M =me (0.2) you will  
26 070 (0.8)  
27 071 A ((slight [head shake]) )  
28 072 M [you'll sort it out]  
29 073 (0.2)  
30 074 A ((slight head shake))  
31 075 (2.9)  
32 076 A (#Iyum)  
33 077 (0.5)  
34 078 M I am?  
35 080 (0.4)  
36 081 A a-hhh  
37 082 (0.2)  
38 083 M a,  
39 084 (0.5)  
40 085 A (2 syllables)  
41 086 (0.4)  
42 087 M I am a [£what? ] a liar!£  
43 088 [((smiles)) ]  
44 089 (0.2)  
45 090 A ((smiles))=  
46 091 M =£d'you think that's what they're saying£?  
47 092 (0.4)  
48 093 A ((looks over to TV))=  
49 094 M =I don't think um half of them know what the other half [are doing ]  
50 095 A [ aha: ]  
51 096 (0.5)  
52 097 M you remind me to put your patch on  
53 098 (1.0)  
54 099 A ((looks back to M))=  
55 100 M =when this is finished.  
56  
57  
58  
59  
60



## Extract 2a

001 M you remind me to put your patch on  
 002 (0.9)  
 003 A ((*looks to M*))=  
 004 M =when this is finished.  
 005 (0.6)  
 006 A (1 syllable) (2 syllables)  
 007 (0.4)  
 008 M one,  
 009 (1.1)  
 010 A (1 syllable)  
 011 (0.2)  
 012 M on,  
 013 (1.0)  
 014 A °h:  
 015 (0.3)  
 016 M want one on both [sides? ]  
 017 A [((*slight head shake*))] (ar:: a: one)  
 018 (0.2)  
 019 M you want one,  
 020 (0.2)  
 021 A ((*slight head shake*)) (2 syllables)  
 022 (0.2)  
 023 M one  
 024 (0.6)  
 025 A (1 syllable)  
 026 (0.4)  
 027 M en?  
 028 (0.2)  
 029 A ((*slight head shake*)) (a::nd)  
 030 (0.3)  
 031 M and?  
 032 (1.3)  
 033 A a-hhh  
 034 (0.2)  
 035 M a  
 036 (1.0)  
 037 A half  
 038 (0.2)  
 039 M >one and a half?<  
 040 (0.4)  
 041 A (1 syllable)  
 042 (0.2)  
 043 M days  
 044 (0.2)  
 045 A ((*moves left lower lip down*))  
 046 (1.3)  
 047 A [(es) ]  
 048 M [what ] your(.)the cream [we're on ] about now still?  
 049 A [((*lower lip mvt*))]

## Extract 2b

10 050 (0.4)  
 11 051 A (es)  
 12 052 (0.4)  
 13 053 M es?  
 14 054 (1.0)  
 15 055 A °eye°  
 16 056 (0.2)  
 17 057 M eye,  
 18 058 (0.3)  
 19 059 A #en  
 20 060 (0.2)  
 21 061 M en  
 22 062 (1.0)  
 23 063 A ((*coughs*))=  
 24 064 M =es eye en,  
 25 065 (0.5)  
 26 066 A ((*coughs*))  
 27 067 (0.4)  
 28 068 M es eye en,  
 29 069 (0.3)  
 30 070 A ((*mouths t*))  
 31 071 (0.2)  
 32 072 M tee?  
 33 073 (0.2)  
 34 074 A ((*slight head shake*))  
 35 075 (1.2)  
 36 076 M since.  
 37 077 (0.3)  
 38 078 A ((*moves left lower lip down*))  
 39 079 (0.7)  
 40 080 M one and a half?  
 41 081 (0.7)  
 42 082 M since  
 43 083 (0.5)  
 44 084 A (1 syllable)  
 45 085 (0.8)  
 46 086 M this,  
 47 087 (0.8)  
 48 088 A °°h:°°  
 49 089 (0.3)  
 50 090 M #no?#  
 51 091 (0.7)  
 52 092 M >#are we talking about the cr[eam?< or are we talking] about patches.  
 53 093 A [(( *lower lip down*)) ]  
 54 094 (0.5)  
 55 095 M cream?  
 56 096 (0.2)  
 57 097 A ((*closes and opens eyes*))=  
 58 098 M =ye[ah]  
 59 099 A [mm]:  
 60

Talk continues with Alex's complaint that it has been one and a half days since he has had any eye cream

### Extract 3a

001 A ((drinks coffee from cup held by M and then directs gaze to M))  
 002 M nough?=  
 003 A =( (nods) )  
 004 M ((moves cup away from M's mouth))  
 005 (0.6)  
 006 A (2 syllables) ((swallows)) (2 syllables)=  
 007 M =( (wipes A's chin) ) it's what?  
 008 (0.4)  
 009 A (aw[ɸ] )  
 010 [ ((smiles)) ]  
 011 M ɸawful! (.) °hɸ  
 012 A [ (1 syllable) ]  
 013 M [ ɸmhay-ke ]  
 014 (0.4)  
 015 M >ɸmhake you a dehecent one laterɸ<  
 016 (0.4)  
 017 M alright? ((stands up from sitting beside A and moves away from view))  
 018 A mm  
 019 (4.4)  
 020 A ((looks to M as she walks back in view)) (2 syllables)  
 021 M ((walks around A's chair and moves to sit down))  
 022 A (2 syllables)  
 023 M ((sits down)) mm?  
 024 (0.6)  
 025 A (2 syllables)  
 026 (0.8)  
 027 M °start agin°  
 028 (0.3)  
 029 A (1 syllable)  
 030 (0.7)  
 031 M where?  
 032 A ((moves lower lip down))  
 033 (0.5)  
 034 M where?  
 035 (0.7)  
 036 A (frm.hhh)  
 037 (0.8)  
 038 M where,  
 039 (0.3)  
 040 A (from .hhh)  
 041 (0.9)  
 042 M ↑from?  
 043 (0.8)  
 044 A ((moves lower lip down and smiles))  
 045 (0.2)  
 046 M where [from? ]  
 047 A [ ((expands smile)) ]  
 048 (0.5)  
 049 M your coffee (.) m:a[king machine ]  
 050 A [arh:: ((moves lips to side)) ] ((slight head shake))

## Extract 3b

051 (0.4)  
 052 M na good?  
 053 (1.0)  
 054 A (1 syllable) [(1syllable)]  
 055 M [is that ] awful as well?  
 056 (0.2)  
 057 A ((shakes head))  
 058 (1.0)  
 059 A (1 syllable)  
 060 (0.4)  
 061 M where  
 062 (0.4)  
 063 A (2 syllables)  
 064 (0.6)  
 065 M where are?  
 066 (0.2)  
 067 A mhh(.) (deeyo)  
 068 (0.2)  
 069 M dee o:  
 070 (0.2)  
 071 M where do,  
 072 (0.2)  
 073 A the-hay  
 074 (0.3)  
 075 M they,  
 076 (0.6)  
 077 M huh £where #do the:y ghet [the coffee f:r-hom£ ]  
 078 A [((smiles)) tche]  
 079 (0.6)  
 080 M £cheap [shop uh£]  
 081 A [ar:: ] ar